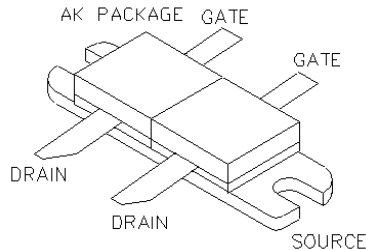




**General Description**

Silicon VDMOS and LDMOS transistors designed specifically for broadband RF applications. Suitable for Military Radios, Cellular and Paging Amplifier Base Stations, Broadcast FM/AM, MRI, Laser Driver and others.

"Polyfet"<sup>TM</sup> process features gold metal for greatly extended lifetime. Low output capacitance and high  $F_t$  enhance broadband performance



**PATENTED GOLD METALIZED SILICON GATE ENHANCEMENT MODE RF POWER VDMOS TRANSISTOR**

**20 Watts Gemini**

**Package Style AK**

**HIGH EFFICIENCY, LINEAR, HIGH GAIN, LOW NOISE**

**ABSOLUTE MAXIMUM RATINGS (TC = 25 °C)**

Total Device Dissipation	Junction to Case Thermal Resistance	Maximum Junction Temperature	Storage Temperature	DC Drain Current	Drain to Gate Voltage	Drain to Source Voltage	Gate to Source Voltage
60 Watts	3 °C/W	200 °C	-65 °C to 150 °C	3.2 A	70 V	70V	30V

**RF CHARACTERISTICS ( 20WATTS OUTPUT )**

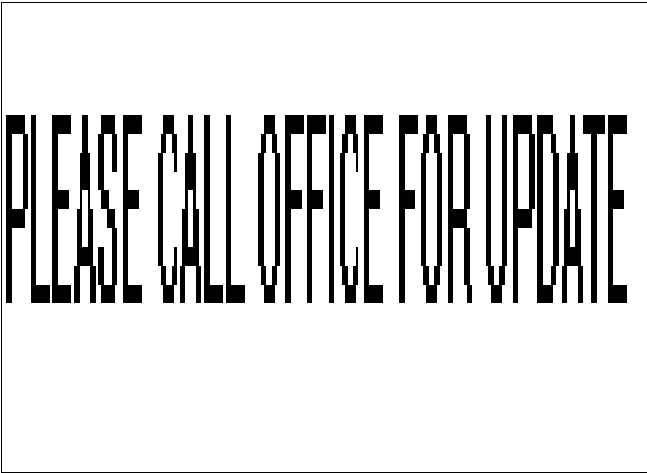
SYMBOL	PARAMETER	MIN	TYP	MAX	UNITS	TEST CONDITIONS
Gps	Common Source Power Gain	12			dB	$I_{dq} = 0.8 \text{ A}$ , $V_{ds} = 28.0 \text{ V}$ , $F = 500 \text{ MHz}$
$\eta$	Drain Efficiency		55		%	$I_{dq} = 0.8 \text{ A}$ , $V_{ds} = 28.0 \text{ V}$ , $F = 500 \text{ MHz}$
VSWR	Load Mismatch Tolerance			20:1	Relative	$I_{dq} = 0.8 \text{ A}$ , $V_{ds} = 28.0 \text{ V}$ , $F = 500 \text{ MHz}$

**ELECTRICAL CHARACTERISTICS (EACH SIDE)**

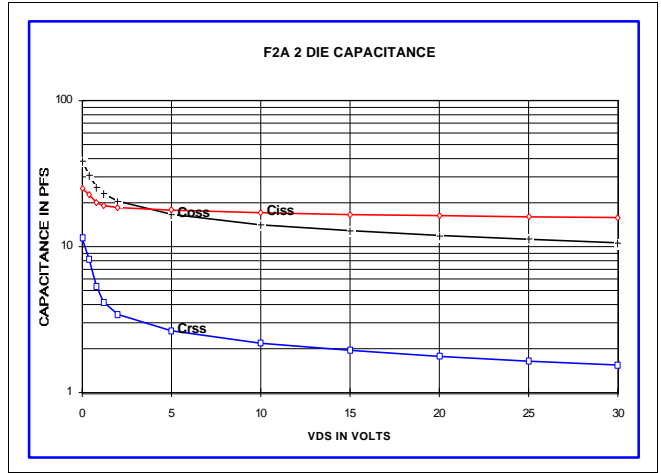
SYMBOL	PARAMETER	MIN	TYP	MAX	UNITS	TEST CONDITIONS
Bvdss	Drain Breakdown Voltage	65			V	$I_{ds} = 0.02 \text{ A}$ , $V_{gs} = 0 \text{ V}$
Idss	Zero Bias Drain Current			0.4	mA	$V_{ds} = 28.0 \text{ V}$ , $V_{gs} = 0 \text{ V}$
Igss	Gate Leakage Current			1	uA	$V_{ds} = 0 \text{ V}$ , $V_{gs} = 30 \text{ V}$
Vgs	Gate Bias for Drain Current	1		7	V	$I_{ds} = 0.04 \text{ A}$ , $V_{gs} = V_{ds}$
gM	Forward Transconductance		0.4		Mho	$V_{ds} = 10 \text{ V}$ , $V_{gs} = 5 \text{ V}$
Rdson	Saturation Resistance		2.1		Ohm	$V_{gs} = 20 \text{ V}$ , $I_{ds} = 2 \text{ A}$
Idsat	Saturation Current		2.4		Amp	$V_{gs} = 20 \text{ V}$ , $V_{ds} = 10 \text{ V}$
Ciss	Common Source Input Capacitance		18		pF	$V_{ds} = 28.0 \text{ V}$ , $V_{gs} = 0 \text{ V}$ , $F = 1 \text{ MHz}$
Crss	Common Source Feedback Capacitance		2		pF	$V_{ds} = 28.0 \text{ V}$ , $V_{gs} = 0 \text{ V}$ , $F = 1 \text{ MHz}$
Coss	Common Source Output Capacitance		12		pF	$V_{ds} = 28.0 \text{ V}$ , $V_{gs} = 0 \text{ V}$ , $F = 1 \text{ MHz}$

# F1520

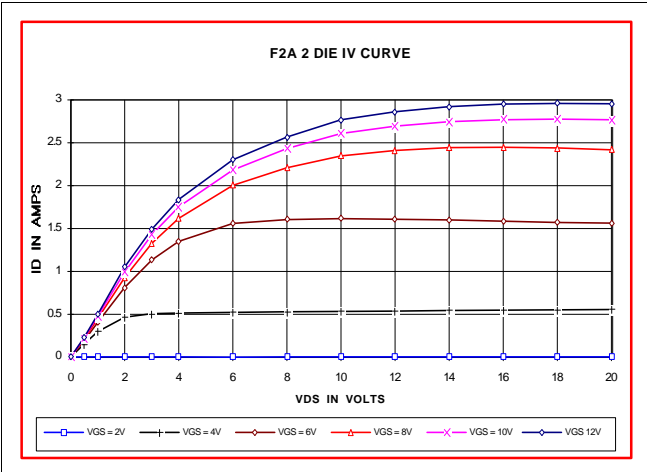
POUT VS PIN GRAPH



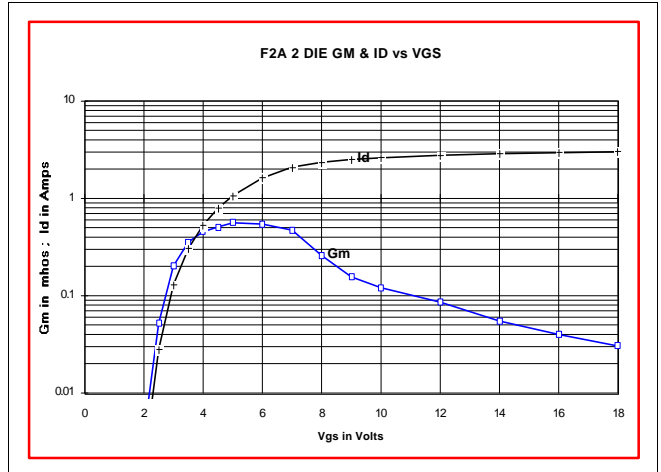
CAPACITANCE VS VOLTAGE



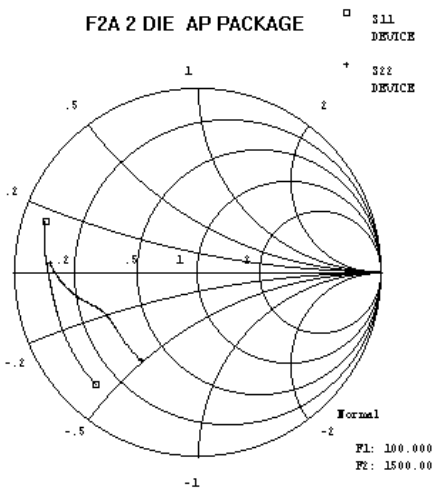
IV CURVE



ID AND GM VS VGS



S11 AND S22 SMITH CHART



PACKAGE DIMENSIONS IN INCHES

